Glossary

basalt A dense, hard rock formed when molten rock reaches Earth's surface and cools rapidly. Basalt has very small crystals that often can be seen with a magnifier. Basalt is the densest volcanic rock.

bedrock Rock that lies under the soil and has not been broken into sediments. Many of the rocks you see are in small pieces. Bedrock has not been broken into pieces. If you dig deep enough in any location, you will reach bedrock. Bedrock can be any kind of rock—igneous, sedimentary, or metamorphic. There can even be more than one kind of rock in one place.

chalk Rock made of the shells of microscopic (tiny) organisms. Chalk that you draw with is made of the rock, chalk, plus other ingredients to make it stronger.

chemical weathering Water and chemicals dissolving rock. Water dissolves many minerals. Any acids in water dissolve minerals, and water carries them away. Some acids are found in nature. Others form when pollutants mix with rain.

cleavage The way a mineral breaks along flat surfaces. Some minerals have obvious cleavage. They break along flat surfaces in predictable ways. For example, mica always peels into thin, flat sheets. Halite (rock salt) always breaks into cubes.

color A property that can help identify a mineral. Color is often the first thing you notice in a mineral. However, some minerals can have more than one color, and more than one mineral can have the same color. So color should not be the only property used to identify a mineral.

conglomerate Rock made when rock particles of different sizes, such as pebbles and sand, are cemented together by pressure and minerals. Conglomerate forms when sediments of many mixed-up sizes are turned into rock.

core sample A cylinder-shaped sample of rock taken by drilling into Earth's crust. Core samples show what kinds of minerals and rocks lie under the surface. A mining company takes samples before mining, so they know where to find valuable minerals. A construction company takes samples before building, so they know where strong rocks are to build on.

deposition The laying down of sediment by water, melting ice, or wind. Moving water carries sediment. When the water slows down, it does not have enough energy to carry the sediment any longer. Then the tiny bits of gravel, sand, and soil sink down and settle in layers.

erosion The natural removal of sediment from the landscape. Erosion is caused mainly by water. Moving water picks up tiny fragments of rock and soil and carries them away. Wind and glaciers can also erode sediments. Erosion shapes Earth's surface. But erosion also removes valuable soil.

fault A weak area in Earth's crust. Earth's crust has some areas that are weaker than others. Earthquakes tend to take place along these weak areas, called faults, because the rock is already broken or because it can break easier than in other places.

fossiliferous limestone Rock made of pieces of shells that you can see. All limestone is made of calcium carbonate, or the mineral calcite. In fossiliferous limestone, the calcium carbonate is in the form of bits and pieces of seashells.

geologist A scientist who studies Earth and the rocks and minerals that make it up. Geologists study everything related to rocks and minerals. Some study the patterns of earthquakes and volcanoes. Others look for oil and gas for large companies. Others study rocks to understand the history of our planet.

Glossary (continued)

gneiss (pronounced *nice)* A metamorphic rock made from granite. Gneiss is a hard rock with light bands of quartz and feldspar and dark bands of mica and other minerals. The minerals in granite re-formed in bands or stripes under tremendous heat and pressure.

granite A dense rock that forms when molten rock cools slowly, leaving visible crystals of different minerals. Granite cools very slowly, deep inside Earth's crust. The crystals in granite are big enough to see.

hardness How hard or soft a mineral is compared to other minerals and materials. Hardness is tested by scratching one mineral against another mineral, or against another substance. If the mineral scratches the other substance, it is harder than that substance. If it is scratched by the other substance, it is softer.

igneous rock Rock that forms when molten (melted) rock cools and hardens. Igneous rock can form underground or at Earth's surface. Molten rock underground is called magma. Molten rock that reaches Earth's surface is called lava.

limestone Rock made mostly of the mineral calcite. Some limestone formed from the shells of extremely tiny living things. Some formed when ocean water evaporated, without any living things involved. In both cases, you cannot see any pieces of shells in it.

luster How the surface of a mineral reflects light. Some minerals have a metallic luster. This means they reflect light the way a metal does. A mineral with glassy luster reflects light the way glass does. Other words that describe luster are dull, earthy, pearly, greasy, and waxy.

marble A shiny, hard metamorphic rock made from limestone. For centuries, sculptors have carved marble into delicate statues. Marble is prized for sculpture because it is fine-grained and hard, and also because some pieces are pure white.

metamorphic rock Rocks formed when other rocks are heated and squeezed deep inside Earth's crust. Metamorphic rock can form from any other kind of rock—igneous, sedimentary, or another metamorphic rock. If a rock is heated and squeezed too much it melts and forms igneous rock when it cools.

mineral A solid substance that occurs in nature, was not formed by anything alive, is made of only one kind of material, and has a crystal structure. A mineral has atoms of certain elements that every sample of that mineral shares. Those elements are arranged in a certain pattern, forming a crystal structure. The crystal structure is there even if the mineral does not form a crystal you can see.

obsidian A natural glass that forms when lava cools very quickly. Obsidian is black and it looks just like glass. It breaks easily, leaving curved surfaces and sharp edges. Because it is easy to chip into a sharp point, obsidian has been used by Native Americans for arrowheads and other tools.

physical weathering Rocks being broken down by other rocks as they bang and rub against each other in water or wind. Moving water in rivers and oceans carries pieces of rock. When these pieces rub against each other, they wear down. Plant roots grow in cracks, pushing rock apart. Rainwater in cracks freezes, and the ice breaks rocks.

property A characteristic, such as hardness or luster, that helps tell one mineral from another. A property is part of the description of a mineral. Several properties are used to identify a mineral. Color, hardness, streak, luster, and cleavage are all mineral properties.

Glossary (continued)

pumice A very light (not dense) rock formed when molten rock from a volcano cools before it reaches the ground. Pumice forms instantly when frothy, molten rock cools in midair. Hot gases are mixed with the molten rock, leaving behind air holes after the rock has cooled. Therefore, pumice is often less dense than water and can float.

rock A solid substance found in nature, made of two or more minerals. Each kind of rock has certain minerals. For example, granite always has quartz, feldspar, and other minerals such as mica or hornblende. But two pieces of the same kind of rock may look different. For example, all granite contains feldspar, but different pieces of granite may have different colors of feldspar. Or one piece of granite may have a lot of mica, while another does not.

sandstone Rock made when sand is cemented by pressure and chemicals. Almost all sandstone formed in a place where water used to be. The water sorted out the sediments into different sizes. Where sand settled out, that is where sandstone formed.

scoria An upper layer of basalt that cools rapidly and is full of holes created by gases that escape during cooling. Scoria has many holes but the minerals it contains are heavier (denser) than pumice so it does not float. Scoria is sometimes used as "lava rock" in gas grills.

sediment Small pieces of rocks and minerals that were worn away from larger rocks. All sediment forms when rocks are broken down into smaller pieces. Before sedimentary rock can form, weathering has to take place.

sedimentary rock Any rock formed from pieces of other rock that have been squeezed by pressure and cemented by minerals. Before sedimentary rock can form, other rock must be weathered into sediments. Sedimentary rock can form from the sediments of igneous, metamorphic, or other sedimentary rocks.

shale Rock made when mud is cemented by pressure and minerals. Mud is one of the smallest sediments. It only settles out of water that is holding still. Anywhere that you find shale, you know that place used to be underwater.

slate A shiny, hard metamorphic rock made from shale. Slate can be broken into even, flat sheets of rock and is used for building. You may have seen it in fireplaces, patios, or on rooftops.

streak The color of the powder of a mineral. Streak is a better way to identify a mineral than color. That is because a mineral that comes in different colors will always have the same color streak. Also, two minerals that are the same color can be recognized if they have different streaks. To test for streak, rub a mineral against the unglazed surface of a tile.

weathering Natural forces breaking rock into smaller pieces. Rocks are broken by moving water, and by wind, ice, and plants. This process is called weathering. Weathering makes sand, gravel, silt and parts of the soil.